

AAR Findings

Newsletter



GARVEY PRESENTS COE OUTSTANDING STUDENT OF THE YEAR AWARD

Tasha Innis, Ph.D., a professor at Trinity College in Washington, D.C., was honored by the FAA Air Transportation Centers of Excellence (COE) as its outstanding student of the year. Administrator Jane Garvey presented the award, which recognizes the contributions of FAA's research partners, during a ceremony at the University of Maryland-College Park (UMCP) on March 16.

Innis, who earned her Ph.D. in applied mathematics from UMCP in December, was one of more than 40 students nationwide who support aviation research through academic and industry partnerships established through the COE.

"These Centers enable the FAA to work in true partnership with the academic community and with industry to advance aviation technology," Garvey said.

Through matching funds provided

by COE partners, the FAA has jointly supported more than 150 aviation related projects over the past eight years—reflecting more than a \$35 million investment.

Intermediate results from Innis's



(From left) Mary Powers-King (AAR-2), FAA Administrator Jane Garvey, COE Outstanding Student of the Year Tasha Innis and Norman Fujisaki (ASD-2).

research in air traffic management were used in "An Operational Assessment of Collaborative Decision Making in Air Traffic Management," which was prepared by the FAA's Free Flight Phase

I Office. Innis also joined the Collaborative Decision Making Team and interacted extensively with the FAA and the airlines.

Innis has made scientific presentations on her work at several professional meetings, including recent national meetings of the Institute for Operations Research and the Management Sciences, and the Society of Industrial and Applied Mathematics.

While at UMCP, Innis taught undergraduate mathematics courses. She was also an active member of the Black Graduate Students in Applied Mathematics and Statistics Association and was instrumental in its receiving the University of Maryland's "Golden Geese Award" for the mentoring and tutoring program it established.

Twenty-nine additional students
(see Awards page 6)

Where
Science
&
Aviation
Converge



The Office of Aviation Research has recently developed a logo and slogan to help identify itself and the work it does for the Federal Aviation Administration. At this time, AAR would like to solicit comments or suggestions. Please e-mail Sabrina Saunders-Hodge, AAR communications manager, at sabrina.saunders-hodge@faa.gov or fill out the feedback sheet on page 8 and fax it to 202/267-5071.

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ENGINE FABRIC ARMOR MAY PREVENT AIRCRAFT CATASTROPHES

Fabric barriers around aircraft engine parts may prevent fragment damage, reducing the risk of aircraft catastrophes by engine failure, according to research recently sponsored by the Airport and Aircraft Safety Research and Development Division (AAR-400).

Using computer-modeling techniques, engineers examined three types of commercially available high-strength polymer materials for stress and impact by fragments. The armor fabric, similar to those used in police bullet-proof vests, were found to prevent most fragments.

Over the years, several civil aircraft

accidents have occurred when fragments from inflight engine failures damaged critical aircraft components.

A single fragment can cause the rest

While most engine fragments are small, armor fabric can prevent them from damaging the aircraft.

of the engine to be torn into sharp metal debris. The debris can then slice through the engine casing and endanger other

critical aircraft systems, as well as jeopardizing the lives of the plane's crew and passengers.

While most fragments are relatively small, aircraft accident wreckage has revealed that the catastrophic loss of all hydraulic systems have been attributed to this type of small debris.

These fragments can be defeated, however, by using the armor fabric.

The FAA has published several reports outlining its progress in designing an armor fabric to protect aircraft from being damaged by failed engine fragments. ➔

News In Brief

The Office of Aviation Research, in support of the Model Work Environment, hosted a presentation chronicling the life and career of Amelia Earhart. A member of the *Ride Into History* reenactment group played the celebrated aviator and fielded questions from the audience while in character.

Representatives of the Aviation Security Human Factors Program (AAR-510) briefed members of the Austrian government Counterterrorism and Aviation Security Service. The briefing covered numerous aviation security topics focusing on human operator performance in threat detection and checkpoint operations.

E-reporting of wildlife strikes is now available through the FAA Wildlife Mitigation website. Pilots, airport personnel and others can report wildlife strikes online. The information is checked for accuracy and then entered into the FAA Wildlife Strike Database. In the year 2000, more than 6,000 strikes were reported to the FAA.

Researchers at the FAA William J. Hughes Technical Center have

completed Chapter 8 of the Human Factors Design Guide. The chapter, dealing with computer human interface, has also been published as a stand-alone technical note.

The Flight Safety Research Section (AAR-421) is collaborating with NASA to develop an aircraft icing safety video and DVD targeted at general aviation pilots. The video, available by the end of October, will discuss ice flying strategies and tactics, structural icing, tailplane icing, induction system icing, and deicing and anti-icing equipment.

The Aviation Security Human Factors Program (AAR-510) supplemented a Delta Airlines Grant to fund the upgrading of Hartsfield Atlanta International Airport's video surveillance system at the main checkpoint. This will assist AAR-500 with the checkpoint effectiveness and efficiency assessment. The computer-based training assessment was recently completed. The Smartcard technology, an alternative approach to logging on to their x-ray system, was kicked off with initial funding from Delta Airlines. ➔

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Communications Manager
Sabrina Saunders-Hodge

Managing Editor
Louise Muniak

Writers
Cymando Henley
Louise Muniak

If you have a story or photo you'd like to contribute to *AAR Findings*, or you'd like to be added to our distribution list, please contact the editorial department by:

E-mail:
Sabrina.Saunders-Hodge@faa.gov

Fax:
202/267-5071

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Just Around The Corner

Please note that schedules are subject to change. It is recommended that you use the websites, e-mail or telephone numbers listed for schedule updates and confirmations.

July 17-20

ATCA 12th Annual International Technical Conference & Exhibit will be held at the Burlington Hotel in Dublin, Ireland. For more information, visit <http://www.atca.org>.

June 17-24

Paris Air Show will be held in Le Bourget, France. For more information, visit <http://www.promosalons.com>.

June 21-22

Volpe National Transportation Systems Center National Symposia on Transportation: Education and Workforce will be held at the U.S. DOT Volpe Center in Cambridge, Mass. E-mail brewerl@volpe.dot.gov for more information.

August 5-10

9th International Conference on Human-Computer Interaction will be held at the Fairmont Hotel in New Orleans. For more information, visit <http://hcai2001.engr.wisc.edu>.

August 7-8

Volpe National Transportation Systems Center National Symposia on Transportation: Enabling Technologies will be held at the U.S. DOT Volpe Center in Cambridge, Mass. E-mail brewerl@volpe.dot.gov for more information.

August 16-19

Taipei Aerospace Technology Exhibit will be held at the Taipei World Trade Centre in Taipei, Singapore. For more information, visit <http://www.taipeitradeshows.com.tw/etate>.

September 4-6

MRO Europe 2001 will be held at the Scottish Exhibit & Conference Centre in Glasgow. For more information, visit <http://www.aviationnow.com/conferences>.

September 10-14

Aerospace Congress & Exhibit By Aerospace North America and SAE will be held at the Washington State Convention and Trade Center in Seattle. Please e-mail kthomson@sae.org for more information.

September 18-20

NBAA 54th Annual Meeting and Convention will be held in New Orleans. This year's event will feature nearly 1,000 vendors; more than 140 aircraft; 12 in-depth, one- or two-day seminars; and more than 10 meetings covering use and

care. For more information, visit <http://www.nbaa.org>.

October 8-12

Human Factors and Ergonomics Society 45th Annual Meeting will be held in Minneapolis. For more information, visit <http://www.hfes.org>.

October 14-18

Aerospace Expo 2001 is an intensive conference for working professionals in the manufacturing, engineering, design and purchasing industry. It will be held at the Los Angeles Convention Center. For more information, visit <http://www.aviationnow.com/conferences>.

October 22-25

3rd Tri-Annual Fire and Cabin Safety Research Conference will be held at the Taj Mahal Hotel and Casino in Atlantic City, N.J. For more information, visit <http://www.fire.tc.faa.gov>.

November

DOD Technical Advisory Group Meeting will be held in San Diego. For more information, visit <http://dticam.dtic.mil/hftag>.

November 4-8

ATCA 46th Annual International Program & Exhibits will be held in Washington, D.C. For more information, visit <http://www.atca.org>.

November 27-30

The FAA Aviation Security R&D Division and the National Safe Skies Alliance will sponsor the **3rd International Aviation Security Technology Symposium** at the Tropicana Resort & Casino in Atlantic City, N.J. Symposium topics will include human factors, technical integration, operational testing and evaluation, aircraft hardening, emerging technologies, and other related topics. For more information, please visit http://www.safeskiesinternational.org/symposium_2001.htm.

December 2-5

MRO Asia 2001 will be held at the Regal Hotel in Hong Kong. The event brings together industry executives, decision-makers and leaders in the maintenance, repair and overhaul marketplace and airline representatives. For more information, visit <http://www.aviationnow.com/conferences>.

December 3-7

4th Annual USA/Europe Air Traffic Management R&D Seminar will be held in Santa Fe, N.M. For more information, visit <http://atm2001.eurocontrol.fr>. ➔

Employee's Corner

Researchers in AAR-421's aircraft icing program were among a team of researchers awarded the NASA "Goal 1: Revolutionize Aviation" award. The award recognizes aircraft icing project safety, noise, emissions, capacity, and/or mobility research.

AAR-431 was among a national team of rotorcraft safety experts awarded the 2001 Harry T. Jensen Award by the American Helicopter Association International. The award recognizes outstanding contributions to the improvement of helicopter reliability, maintainability, and/or safety through improved design.

The Women of AAR-500 held their 6th annual holiday luncheon on December 14. See photograph below.

Kenneth Allendoerfer (AAR-100), a human factors researcher at the FAA William J. Hughes Technical Center, received a letter of commendation for his work on the Computer Human Interface validation for STARS Full Service-1 conducted at the Technical Center's Human Factors Laboratory in December.

Dr. Thomas Chamberlain (AAR-520) taught an eight-hour segment of a graduate course on the chemistry of explosives at the University of Puerto Rico at Mayaguez (UPRM). The course is taught yearly and is part of the Hispanic Association of Colleges and Universities Program, which allows graduate students from UPRM to study and train at the FAA Aviation Security Laboratories. Chamberlain also gave a seminar at the student chapter of the American Chemical Society at UPRM.

Dr. William E. Collins, the director of the civil aeromedical institute for the past 12 years, retired from government service on January 3. Collins was appointed director in August 1989 following one year as both assistant director and acting director.

Howard Fleisher (AAR-530) is now the acting program lead for Aircraft Hardening while Ken Hacker is on assignment to the Argus Program.

Dr. Frank Fox has returned to the Explosives and Weapons Detection R&D Branch (AAR-520).

Donald W. Gallagher (AAR-411) joined the Situational

Awareness Technology for Air Traffic Control focus team whose purpose is to develop and implement technology tools that will provide and/or enhance airport surface situational awareness to air traffic controllers. Gallagher was selected to become a member by the Joint Safety Implementation Team.

The Aviation Security Research and Development Division nominated Laurie McGrath and Patty Reichenbach (both AAR-530) for the Wonder Women's Award.

Sue McLaughlin (AAR-500) and Tama Nelson (AAR-540) were awarded plaques for their participation in the Federal Woman's Program and as delegates of the various Federal Women's Program Wonder Woman Award Committees.

Dr. Eric Neiderman was selected for the position of Human Factors Program Lead (AAR-510).

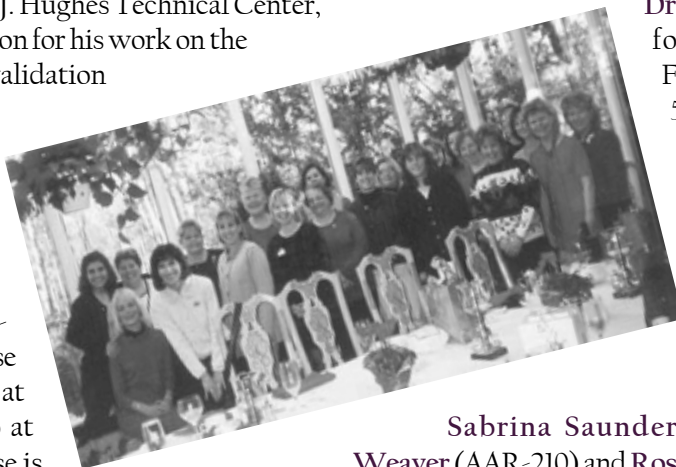
Pete Saraceni was officially transferred from the Flight Safety Research Section (AAR-421) to the Systems Integration Branch (AAR-510).

Sabrina Saunders-Hodge (AAR-200), Pat Weaver (AAR-210) and Roseanne Weiss (AAR-400) have volunteered to serve as diversity advocates in the newly established ARA Diversity Advocate Program.

Michael Snyder (AAR-510) was elected, by plurality, to the office of president-elect of the South Jersey Human Factors and Ergonomics Society—a technical organization dedicated to collaboration and communication among human factors professionals in the New Jersey/Philadelphia region. Snyder will serve as president-elect in 2001 and as president in 2002.

Anthony Vanchieri was reassigned to the Planning and Requirements Branch (AAR-530) from the Security Equipment IPT Branch (AAR-550). He will remain in Washington supporting the DOT Office of Intelligence and Security and serving as a liaison with the Aviation Security Division for the development of programs that support the department's security R&D needs.

Mike Versage (AAR-530) was selected for the Executive Potential Program. ➔



HOME & HOME BRINGS GOVERNMENT AND BUSINESS TOGETHER

Two years ago, in March 1999, FAA Administrator Jane Garvey and NASA Administrator Daniel Goldin hosted an industry roundtable to increase awareness of the scope, capabilities, and directions of government research programs in air and space transportation technology.

The two-day event, which brought together about eighty organizations, led to a series of meetings called Home & Home that delve deeper into respective government and industry organizations.

The objective of each meeting—conducted at the “home” site of where research is being conducted—is to give participants a view of the host site’s operations and capabilities, as well as an opportunity to establish dialog and contacts for continued interaction or partnerships.

In the case of government locations, the visits also offer information regarding the scope and breadth of research

impacting aviation and space transportation.

Five government and two industry visits have been conducted thus far. The next will tentatively be hosted by Dallas/Ft. Worth and American Airlines.

The objective of each visit is to give participants a view of the host site’s operations and capabilities.

Each visit is planned with a thematic focus to help organize the information during breakout discussion sessions.

In these sessions, airlines and airport operators, government planners, aircraft manufacturers, and other members of the aviation community provide their perspective on next-generation aviation technology, air traffic management, security, safety, operations and information systems, and technology

applications in airport noise and environmental issues.

For example, during the last Home & Home meeting hosted by Boeing on April 25-26, Herm Rediess, director of the Office of Aviation Research (AAR-1) participated in a roundtable discussion that provided perspectives on aeronautics technology.

Tours of the Boeing Works Technology Expo were conducted and participants were given an opportunity to view the many innovative technologies, processes, tools and systems Boeing is developing. Participants were also given a tour of the Boeing wide-body aircraft final assembly plant.

For more information about Home & Home, contact Genia Embrey-Brock (AAR-3), special assistant to AAR Director Herm Rediess, at 202/267-7197 or visit <http://www.aerospace.nasa.gov/home&home>. ➔

Laboratory Moves Toward Certification



Taking steps towards compliance with a Congressional mandate to make the Aviation Security Laboratory compliant with ISO, fourteen members of the Aviation Security R&D team (AAR-500) attended a 3-day training session conducted by the American Society for Quality beginning April 3. Some of those in attendance include: (front from left) Sharon Moore, Terry Lewis (AAR-400), Steve Rooney (JIL Information Systems), Pat Reichenbach, Diane Wilson, Shiu Cheung, (back from left) J.P. Russell (Instructor), Ron Polillo, Skip Lane, Therese Brennan, Dave Fabry, Donna Tropiano, Jane Burke, and John Tye.

GARVEY PRESENTS COE OUTSTANDING STUDENT OF THE YEAR AWARD

(Awards con't. from page 1)

from university Centers nationwide were honored by the Department of Transportation for their achievements and promises for future contributions to the transportation field. These students received their awards at the Ninth Annual Student of the Year Awards ceremony held this January in Washington, D.C. Rodney Slater, then DOT secretary, joined Kelley Coyner, then Research and Special Programs Administration administrator, and Mortimer Downey, then DOT deputy secretary, in presenting the awards.

Among the DOT award winners was Sean Smith, a graduate student at the University of Illinois, Urban-Champaign (UIUC). He was honored at the ceremony as the DOT-COE Student of the Year.

As the lead graduate student working on the COE reflective cracking study, Smith is involved in construction monitoring and sampling, laboratory testing and evaluation, and field instrumentation. The goal of this project is to design, instrument and monitor innovative rehabilitation methods for

general aviation airports.

Additionally, Smith developed a Visual Basic Database Program to store and retrieve volumes of quality control data collected during the construction of the FAA National Airport Pavement Test Facility, located at the FAA William J. Hughes Technical Center.

For more information about COE initiatives, contact Patricia Watts, COE program director, at 609/485-5043 or e-mail her at patricia.watts@faa.gov.

See photographs below for these and other recent award winners. ➔



Presenters and awardees pose for a group photo at the Ninth Annual Student of the Year Awards ceremony. Thirty students from universities nationwide were honored for their achievement and promises for future contributions to the transportation field.



FAA employees were honored for their participation in the Historically Black Colleges and Universities program (HBCU). (From left) Steve Zaidman (ARA-1), FAA Administrator Jane Garvey, HBCU Manager of the Year Paul A. Polski (AAR-500) and Herm Rediess (AAR-1).



(From left) Herm Rediess (AAR-1), Paul A. Polski (AAR-500), HBCU Council Member of the Year Nelson Miller (AAR-420), Margaret Powell (AHT-100), HBCU Support Person of the Year David Taylor (AAR-540), Genia Embrey-Brock (AAR-3), and Tom O'Brien (AAR-400).



(From left) DOT Student of the Year Sean Smith and then Deputy Secretary of Transportation Mortimer Downey.

VOLUNTEERISM AT THE FEDERAL AVIATION ADMINISTRATION

**iThis country will not be a good
place for any of us to live in
unless we make it a place for all
of us to live in,î
Theodore Roosevelt.**



It's 11:45 am on a Wednesday and Denise Davis (AAR-200) stands in a narrow, crowded aisle in a musty school auditorium talking with a student about his Science project. A flurry of young girls run past as she silently jots down notes and tallies up the score before moving onto the next project.

This is by no means a typical day for Davis, who works full-time for the FAA Office of Aviation Research. Instead, today Davis is among a handful of employees participating in a FAA-sponsored volunteer activity at Drew Freeman Middle School in Suitland, Md.

This is the second time Davis has judged a Science fair through the FAA.

"When an opportunity like this comes along I grab at it," Davis says. "If we're not there for them today, what will become of the young leaders of tomorrow?"

Volunteerism & the workplace

Years ago, volunteering one's time during work hours would have been considered a happy anomaly. Now it is a common occurrence as the recent resurgence of civic responsibility, once restricted to after hours, has spilled over into the business world.

A 1999 survey of U.S. companies conducted by the Points of Light Foundation found a significant increase in the number of companies that incorporate volunteer programs into their overall business plan—up nearly 30 percent from a similar survey conducted in 1992.

The survey, *The Corporate Volunteer Programs—A Strategic Resource: The Link Grows Stronger*, also found that 81 percent connect volunteering to their overall business strategies and 97 percent say these programs improve employee teamwork.

The blossoming of volunteer activities at the FAA is evident of the Administration's shared commitment with its employees to serve the greater community.

"The FAA recognizes the importance of our on-going commitment to volunteer activities such as this," Davis says. "It is only through our participation that our community will be strengthened."

The Science fair is one of many volunteer activities FAA employees can participate in throughout the year.

Volunteer efforts at the FAA vary: ranging from short-term projects like Christmas in April activities to long-term tutoring or mentoring programs.

Participants must first receive their manager's approval and be willing to make up any work hours used.

"I have a good supervisor that recognizes the importance of activities like this Science fair," Davis says.

Participating in other ways

For those unable to give their time, donations of money, clothes and toys to holiday drives is another way to contribute. AAR organizes an angel tree project for the Salvation Army.

"This is the most rewarding for me because many of the parents we aid are unable to even buy their children clothing or shoes," Davis says, adding that "knowing I was able to put a smile on a child's face for that one day at Christmas is the biggest thrill.

"I know how hard it is juggling work and this," says Davis, "but if you're unable to volunteer with the FAA, find somewhere else like a community center or church."

For more information about how you can participate in the FAA volunteer program, contact Rita Nelson (AHR-20) at 202/267-8037 or e-mail her at rita.nelson@faa.gov. ➔

FAA CENTER OF EXCELLENCE FOR GENERAL AVIATION ESTABLISHED

Embry-Riddle Aeronautical University was recently selected as the lead of a team of universities that will form the new Air Transportation Center of Excellence for General Aviation—expected to be operational within six months.

Other members include the University of Alaska, Florida A&M University, the University of North Dakota and Wichita State University.

FAA Centers of Excellence (COE) are designed on behalf of the administrator following rigorous competition and a formal evaluation based on criteria mandated in the FAA Research Engineering and Development Authority Act of 1990.

In August 2000, the FAA solicited proposals to establish a COE for General Aviation and three teams applied.

“The proposal submitted by the Embry-Riddle team creates a well-

rounded manageable consortium capable of undertaking the necessary research,” said Patricia Watts, COE program director.

**COE are designed
on behalf of
the Administrator
following
rigorous competition
and
formal evaluation.**

Through the Air Transportation Centers of Excellence program, the FAA enhances internal research efforts and accesses academic research, striving to hasten the application of this work to benefit the aviation community and the flying public.

By establishing major research centers to advance aviation-related technologies, the FAA is creating a pool of professionals trained in aviation-related research areas; helping to finance graduate education; fostering cooperative FAA-university-industry research and development; and ultimately improving the national airspace system.

“These centers form a cumulative repository of knowledge, and encompass the entire spectrum of research and development from basic research to engineering development and prototyping,” Watts said.

In addition to the new COE for general aviation, other COEs focus on airport technology, operations research and airworthiness assurance.

For more information contact Patricia Watts at 609/485-5043 or e-mail her at patricia.watts@faa.gov. ➔

AAR Findings Feedback Sheet

Use this Feedback Sheet to let us know what you think of *AAR Findings*. We're especially interested in your views concerning design, writing style, and content. What would you like to see and read in *AAR Findings*? Let us know!

Your Name: _____ Phone Number: _____

Location: _____

Feedback/Story idea(s): _____



Photocopy this feedback sheet and fax to Sabrina Saunders-Hodge at 202/267-5071. Thank you!